CLAIMS:

1. A power converter, comprising:

a current source providing an input current;

a transformer having primary and secondary windings;

a full-bridge switch network coupled to the current source and the primary winding and having first and second switch pairs, each switch pair having a high and low side switch and being configurable to pass current to the primary winding through the high side switch and from the primary winding through the low side switch, the switch pairs being configurable to bypass the primary winding;

a clamping circuit having a clamping capacitor and connected, for each switch pair, to a junction between the high side switch and the primary winding;

an output bus coupled to the secondary winding and providing an output voltage; and

a control circuit having inputs based on the output voltage and the input current and configured to generate outputs controlling the switch pairs and the clamping circuit.

2. The power converter of claim 1, wherein the clamping circuit comprises a first clamping switch coupled to the first high side switch and a second clamping switch coupled to the second high side switch.

3. The power converter of claim 2, wherein the control circuit outputs comprise first switch pair control signals, second switch pair control signals, a first clamping switch control signal and a second clamping switch control signal.

4. The power converter of claim 3, wherein the clamping switch control signals are derived from the first and second switch pair control signals.

5. The power converter of claim 3, wherein:

the first and second switch pair controls signals cause the switch pairs to cycle through phases in which the first switch pair is conducting and the second switch pair is non-

conducting, in which the first and second switch pairs are conducting, and in which the second switch pair is conducting and the first switch pair is non-conducting, and

the first and second clamping switch control signals cause the first clamping switch to be conducting when the second switch pair is non-conducting and cause the second clamping switch to be conducting when the first switch pair is non-conducting.

6. The power converter of claim 1, further comprising a start-up control circuit configured to selectively control the switch pairs and the clamping circuit so as to raise the output voltage to a desired level when the converter is activated from a powered-down condition.

7. The power converter of claim 6, wherein the start-up control circuit selectively activates and de-activates individual switches in each switch pair.

8. The power converter of claim 7, wherein:

the clamping circuit comprises a first clamping switch coupled to the first high side switch,

the clamping circuit further comprises a second clamping switch coupled to the second high side switch, and

the start-up circuit selectively activates and de-activates the first and second clamping switches.

9. The power converter of claim 8, wherein the start-up circuit comprises a controller configured to output a repeating pattern of signals to activate and de-activate the individual switches in each switch pair.

10. A power converter, comprising:

a current source providing an input current;

a transformer having primary and secondary windings;

a switch network coupling the current source and the primary winding;

a clamping circuit coupled to the switch network;

an output bus coupled to the secondary winding and providing an output voltage; and

a control circuit having inputs based on the output voltage and the input current, configured to generate switch network control signals based on the inputs, and configured to generate clamping circuit control signals based on the switch network control signals.

11. The power converter of claim 10, wherein:

the switch network comprises a full bridge having first and second switch pairs, and

the clamping circuit comprises first and second clamping switches.

12. The power converter of claim 11, wherein the switch network control signals comprise a first set of control signals controlling the first switch pair and a second set of control signals controlling the second switch pair, and wherein the clamping circuit control signals comprise a first clamping switch control signal and a second clamping switch control signal.

13. The power converter of claim 12, wherein:

the first and second sets of control signals cause the switch pairs to cycle through phases in which the first switch pair is conducting and the second switch pair is non-conducting, in which the first and second switch pairs are conducting, and in which the second switch pair is conducting and the first switch pair is non-conducting, and

the first and second clamping switch control signals cause the first clamping switch to be conducting when the second switch pair is non-conducting and cause the second clamping switch to be conducting when the first switch pair is non-conducting.

14. The power converter of claim 10, further comprising a start-up control circuit configured to selectively control the switch network and the clamping circuit so as to raise the output voltage to a desired level when the converter is activated from a powered-down condition.

15. The power converter of claim 14, wherein the start-up control circuit selectively activates and de-activates individual switches in the switch network.

16. The power converter of claim 15, wherein the clamping circuit comprises a clamping switch and the start-up circuit selectively activates and de-activates the clamping switch.

17. The power converter of claim 16, wherein the start-up circuit comprises a controller configured to output a repeating pattern of signals to activate and de-activate the individual switches in the switch network.